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EXAMINER	
SCHINDLER, DAVID M	

ART UNIT	PAPER NUMBER
2862	

NOTIFICATION DATE	DELIVERY MODE
10/11/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/556,093

Applicant(s)

HONKURA ET AL.

Examiner

David M. Schindler

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-11 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11/9/05, 3/17/06, 4/19/07

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

Art Unit: 2862

**DETAILED ACTION**

***Information Disclosure Statement***

1. With regard to the Information Disclosure Statement (IDS) of 3/17/2006, the Examiner notes that the last page which contains a list of related cases has not been considered. Specifically, the first listed reference has not been provided, and the second listed reference is the current <sup>application</sup> ~~applicant~~ being examined. Additionally, a copy of reference 2003-172633 listed on the IDS of 11/9/2005 was not provided. However, this reference has been considered and a copy of this reference has been placed into the case file.

RW  
9/27/07

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 9, 10, 13, and 14 are rejected under 35 U.S.C.

102(e) as being anticipated by Honkura et al. (Honkura)

(2006/0123906).

Art Unit: 2862

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

4. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

As to Claim 9,

Honkura discloses three magnetic sensing parts ((43a), (43b), and (43c)) that detect magnetic field strength in respective directions along three axes perpendicular to each other (Page 12, Paragraph [0221]), and two tilt sensing parts ((23a), (23b), in combination with (22) and (21a) and (21b)), wherein each tilt sensing part includes a cantilever (22) having a magnetic body ((21a), (21b)) that moves in accordance with the tilt angle ((Abstract / note accelerometer) and (Figure 27)), and magnetic detection head ((23a), (23b)) that detects a

Art Unit: 2862

displacement of the magnetic body (Page 6, Paragraphs [0109] and [0110]), the three magnetic sensing parts and the two magnetic detection heads are each formed using a magnetic detection element of a same type (Page 3, Paragraph [0056]), and at least one electronic circuit for controlling the five magnetic detection elements (Claims 7 and 8), the three magnetic sensing parts, and the two tilt sensing parts are disposed in a single package in a form of a module (Page 6, Paragraph [0109]).

As to Claim 10,

Honkura discloses the magnetic detection elements used to form the three respective magnetic sensing parts and the magnetic detection elements used to form the two respective magnetic detection heads are each formed using a magneto-impedance sensor element (Page 3, Paragraph [0056]).

As to Claim 13,

Honkura discloses an electronic circuit (12) having a change-over switch is used in a time-sharing manner to control the five magnetic detection elements ((Figure 27) and (Page 8, Paragraph [0137]) and (Page 11, Paragraph [0184]) and (Page 12, Paragraphs [0221] and [0222])).

As to Claim 14,

Honkura discloses the attitude detection sensor has a function of making a correction by subtracting the value of the

Art Unit: 2862

magnetic field measured by the magnetic sensing part disposed in a parallel with the magnetic detection head of each tilt sensing part from the value of a magnetic field measured by the magnetic detection head of each tilt sensing part (Page 7, Paragraph [0128])).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2862

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being obvious over Honkura et al. (Honkura) (2006/0123906) in view of a second embodiment of Honkura et al. (HE2) (2006/0123906).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(1)(1) and § 706.02(1)(2).

Art Unit: 2862

8. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

As to Claim 11,

Honkura discloses as explained above.

Honkura further discloses each cantilever (22) is in a form of a strip beam (Figure 27), and the magnet body ((21a), (21b)) is disposed on a second end of which the cantilever is rotatable in a direction normal to a main plane of the cantilever (Figure 27).

Honkura does not disclose a first end of which is fixed to a substrate of the package via a supporting post, and the cantilever is disposed such that the direction of the rotation is parallel with the surface of the substrate.

HE2 discloses a first end of which is fixed to a substrate of the package via a supporting post (28), and the cantilever is disposed such that the direction of the rotation is parallel with the surface of the substrate ((Figure 1) and (Page 6, Paragraphs [0109] and [0110])).

It would have been obvious to a person of ordinary skill in the art to modify Honkura to include a first end of which is fixed to a substrate of the package via a supporting post, and

Art Unit: 2862

the cantilever is disposed such that the direction of the rotation is parallel with the surface of the substrate as taught by HE2 in order to provide an accelerometer that allows for measuring information of automobiles and autonomous mobile robots and for controlling manipulators of robot arms of stationary robots (Page 2, Paragraph [0050]) and utilize a readily available supporting mechanism.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being obvious over Honkura et al. (Honkura) (2006/0123906).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned

Art Unit: 2862

by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(1)(1) and § 706.02(1)(2).

As to Claim 15,

Honkura discloses the attitude detection sensor is in a form of a surface-mounting chip ((Figure 27) and (Page 6, Paragraph [0109])).

However, Honkura does not explicitly teach dimensions of the device as recited in claim 15. Nonetheless, modifying Honkura to have the relative dimensions as recited in the claims would be obvious to one having ordinary skill in the art through routine experimentation because where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. See *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 225 USPQ 232 (1984). One having ordinary skill would thus be motivated to

Art Unit: 2862

use the above dimensions in view of Honkura, which recognized a need for a the components to be on a common IC substrate and to be integrated to produce a modularized form (Page 6, Paragraph [0109])).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being obvious over Honkura et al. (Honkura) (2006/0123906) in view of a third embodiment of Honkura et al. (HE2) (2006/0123906).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a

Art Unit: 2862

terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(1)(1) and § 706.02(1)(2).

As to Claim 16,

Honkura discloses the features of claim 9 (see the above claim 9 rejection).

Honkura does not disclose a central processing unit, and a memory element for storing an operation program, wherein the central processing unit is configured to download a signal output from each magnetic detection sensor and performs a predetermined operation in accordance with the operation program.

HE3 discloses a central processing unit (128), and a memory element for storing an operation program, wherein the central processing unit is configured to download a signal output from each magnetic detection sensor and performs a predetermined operation in accordance with the operation program (Page 9, Paragraphs [0144] and [0145]).

It would have been obvious to a person of ordinary skill in the art to modify Honkura to include a central processing unit, and a memory element for storing an operation program, wherein

Art Unit: 2862

the central processing unit is configured to download a signal output from each magnetic detection sensor and performs a predetermined operation in accordance with the operation program as taught by HE3 in order to advantageously utilize a readily available computing device.

### ***Double Patenting***

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 9, 10, and 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as

Art Unit: 2862

being unpatentable over claims 1, 2, 3, and 4 of copending Application No. 11/144,459 ('459). Although the conflicting claims are not identical, they are not patentably distinct from each other because

As to Claim 9,

The features of this claim are disclosed by the combination of the features of claims 1 and 2 of '459.

As to Claim 10,

The features of this claim are disclosed by the combination of the features of claims 1 and 3 of '459.

As to Claim 14,

The features of this claim are disclosed by the combination of the features of claims 1 and 4 of '459.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 11, 13, 15, and 16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 11/144,459 ('459) in view of Honkura et al. (Honkura) (2006/0123906).

As to Claim 11,

Art Unit: 2862

'459 discloses the features of claim 9 (see the above rejection under paragraph 12 of this Office Action).

'459 does not disclose each cantilever is in a form of a strip beam, a first end of which is fixed to a substrate of the package via a supporting post, and the magnet body is disposed on a second end of which the cantilever is rotatable in a direction normal to a main plane of the cantilever, and the cantilever is disposed such that the direction of the rotation is parallel with the surface of the substrate.

Honkura discloses each cantilever (22) is in a form of a strip beam (Figure 1), a first end of which is fixed to a substrate of the package via a supporting post (28), and the magnet body ((21a), (21b)) is disposed on a second end of which the cantilever is rotatable in a direction normal to a main plane of the cantilever, and the cantilever is disposed such that the direction of the rotation is parallel with the surface of the substrate ((Figure 1) and (Page 6, Paragraphs [0109] and [0110])).

It would have been obvious to a person of ordinary skill in the art to modify '459 to include each cantilever is in a form of a strip beam, a first end of which is fixed to a substrate of the package via a supporting post, and the magnet body is disposed on a second end of which the cantilever is rotatable in

Art Unit: 2862

a direction normal to a main plane of the cantilever, and the cantilever is disposed such that the direction of the rotation is parallel with the surface of the substrate as taught by Honkura in order to provide an accelerometer that allows for measuring information of automobiles and autonomous mobile robots and for controlling manipulators of robot arms of stationary robots (Page 2, Paragraph [0050]) and utilize a readily available supporting mechanism.

As to Claim 13,

'459 does not disclose an electronic circuit having a change-over switch is used in a time-sharing manner to control the five magnetic detection elements.

Honkura discloses an electronic circuit (12) having a change-over switch is used in a time-sharing manner to control the five magnetic detection elements ((Figure 27) and (Page 8, Paragraph [0137]) and (Page 11, Paragraph [0184]) and (Page 12, Paragraphs [0221] and [0222])).

It would have been obvious to a person of ordinary skill in the art to modify '459 to include an electronic circuit having a change-over switch is used in a time-sharing manner to control the five magnetic detection elements as taught by Honkura in order to prevent the signals from the five magnetic detection elements from influencing each other.

Art Unit: 2862

As to Claim 15,

'459 does not disclose the attitude detection sensor is in a form of a surface-mounting chip with a width equal to or less than 6mm, a depth equal to or less than 6mm, and a height equal to or less than 2 mm.

Honkura discloses the attitude detection sensor is in a form of a surface-mounting chip ((Figure 27) and (Page 6, Paragraph [0109])).

It would have been obvious to a person of ordinary skill in the art to modify '459 to include the attitude detection sensor is in a form of a surface-mounting chip as taught by Honkura in order to advantageously utilize the sensor on a circuit board with other components.

However, '459 in view of Honkura does not explicitly teach dimensions of the device as recited in claim 15. Nonetheless, modifying Honkura to have the relative dimensions as recited in the claims would be obvious to one having ordinary skill in the art through routine experimentation because where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. See *Gardner v. TEC Systems*,

Art Unit: 2862

Inc., 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 225 USPQ 232 (1984). One having ordinary skill would thus be motivated to use the above dimensions in view of '459 in view of Honkura, which recognized a need for a the components to be on a common IC substrate and to be integrated to produce a modularized form (Page 6, Paragraph [0109] of Honkura).

As to Claim 16,

'459 discloses the features of claim 9 (see the above rejection of claim 9).

'459 does not disclose a central processing unit, and a memory element for storing an operation program, wherein the central processing unit is configured to download a signal output from each magnetic detection sensor and performs a predetermined operation in accordance with the operation program.

Honkura discloses a central processing unit (128), and a memory element for storing an operation program, wherein the central processing unit is configured to download a signal output from each magnetic detection sensor and performs a predetermined operation in accordance with the operation program (Page 9, Paragraphs [0144] and [0145]).

It would have been obvious to a person of ordinary skill in the art to modify '459 to include a central processing unit, and

Art Unit: 2862

a memory element for storing an operation program, wherein the central processing unit is configured to download a signal output from each magnetic detection sensor and performs a predetermined operation in accordance with the operation program as taught by Honkura in order to advantageously utilize a readily available computing device.

This is a provisional obviousness-type double patenting rejection.

***Allowable Subject Matter***

14. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is an examiner's statement of reasons for allowance:

As to Claim 12,

The primary reason for the allowance of claim 12 is the inclusion of two electronic circuits each having a change-over switch are used in a time-sharing manner to control the five magnetic detection elements. It is these features found in the claim, as they are claimed in the combination that has not been

Art Unit: 2862

found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on Monday-Friday (8:00AM-5:00PM).

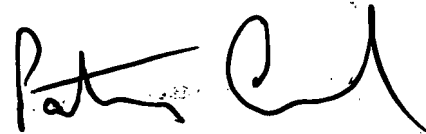
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2862

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David M. Schindler  
Examiner  
Art Unit 2862

DMS

A handwritten signature in black ink, appearing to read 'Patrick Assouad', is written over a faint, circular official stamp.

**PATRICK ASSOUD**  
**SUPERVISORY PATENT EXAMINER**